



STUDENT ID NO

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MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 3, 2017/2018

EEE7316 – ENERGY POLICY, REGULATIONS AND STANDARDS

(MEEE)

**1 JUNE 2018
10.00 a.m – 13.00 p.m
(3 Hours)**

INSTRUCTIONS TO STUDENT

1. This question paper consists of 5 pages including the cover page with 4 Questions only.
2. Answer **ALL** questions. The distribution of the marks for each question is given.
3. Please write all your answers in the Answer Booklet provided.

Question 1

(a) The evidence gleaned from the last 8 years of the Small Renewable Energy Power (SREP) programme, the Biogen and the MBIPV projects established the existence of eight issues, which, if not addressed would perpetuate the problems indefinitely. Two of the issues are 'arbitrary price setting' and 'absence of regulatory framework'. What are the drawing lessons based on these two issues? [4 marks]

(b) Renewable Energy Power Purchase Agreement (REPPA) was created in order to achieve a legal relationship between the RE power producer and the utility for Small Renewable Energy Power Programme (SREP). However, Renewable Energy (RE) projects proponents are confronted with a few issues. Briefly explain **TWO** of the issues. [6 marks]

(c) Briefly explain 'Grid Parity'. [4 marks]

(d) To achieve the RE policy objectives, five strategic thrusts have been identified which would enable Malaysia to pursue RE development more aggressively. Briefly explain **TWO** of these strategic thrusts. [6 marks]

(e) Briefly explain 'Feed-in Tariff (FiT)', and its advantages. [5 marks]

Question 2

(a) The development of the guideline was a joint effort between the public and the private sectors. Draw the organization structure of the Energy-Efficient Equipment Management Committee (EEMC). [6 marks]

(b) List out **FIVE** selection criteria of transformers. [5 marks]

(c) When changing to a smaller or high efficiency motor, it is important to consider a few factors. List out **TWO** considerations when selecting a motor. [4 marks]

(d) Table Q2 provides the recommended maintenance schedule for fan and blowers. Insert the recommended symbols whether the maintenance will have to be Daily (D), Monthly (M), Yearly (Y) or As Required (R). [10 marks]

Continued...

Table Q2

| | Lock-Out signage at electrical panel | Log Out signage at electrical panel | Bearing | Shaft | V-Belt | Pulley | Coupling | Fan blade & wheel | Fan motor sheaves | Motor starter & other electrical components | BMS controls | Bolts and nuts | All joints and seals | Fan connector | Interior & exterior of exhaust fan | Filter | Motor | Outlet damper |
|--|--------------------------------------|-------------------------------------|---------|-------|--------|--------|----------|-------------------|-------------------|---|--------------|----------------|----------------------|---------------|------------------------------------|--------|-------|---------------|
| A. POWER OFF | | | | | | | | | | | | | | | | | | |
| 1. Switch Off power and ensure zero voltage. | | | | | | | | | | | | | | | | | | |
| 2. Inspect, align and lubricate | | | | | | | | | | | | | | | | | | |
| 3. Check belt tension, adjust or align | | | | | | | | | | | | | | | | | | |
| 4. Replace if scheduled or where appropriate (based on running hours) | | | | | | | | | | | | | | | | | | |
| 5. Check conditions of wear and tear | | | | | | | | | | | | | | | | | | |
| B. POWER ON | | | | | | | | | | | | | | | | | | |
| 1. Check vibration | | | | | | | | | | | | | | | | | | |
| 2. Check abnormal noise | | | | | | | | | | | | | | | | | | |
| 3. Check for balancing | | | | | | | | | | | | | | | | | | |
| 4. Record Amps & compare to manufacturer. recommended value, change motor if necessary | | | | | | | | | | | | | | | | | | |
| 5. Check for proper operation | | | | | | | | | | | | | | | | | | |

[10 marks]

Continued...

Question 3

(a) What are the purposes of Energy Commission Act 2001? [4 marks]

(b) Sketch the Energy Efficiency (EE) label, with the following information placed correctly in the sketch.

- Energy rating is 2-star.
- Model information is KDK, K15Y2.
- Average energy consumption per year is 95 kW/h.
- Energy saving compared to an average product is 4%

[5 marks]

(c) There are basically two types of energy audits; namely 'walk-through/preliminary energy audit' and 'detailed audit'. Briefly explain these two energy audits. [8 marks]

(d) Buildings will be awarded the Green Building Index (GBI) rating based on six key criteria. State **THREE** of these criteria. [3 marks]

(e) List out **FIVE** factors affecting the energy use in buildings. [5 marks]

Question 4

(a) MS1525:2001 is the "Code of Practice on Energy Efficiency and Use of Renewable Energy for Non-residential Buildings." MS1525 has recommended that the Overall Thermal Transfer Value (OTTV) of a building should not exceed 50 W/m². What information does an OTTV provide? [3 marks]

(b) List out **TWO** basic requirements of MS 1525. [4 marks]

(c) State the purpose of Standard IEC 60034-2.1. [2 marks]

(d) Briefly describe Energy Management Systems (EMS), and provide **THREE** main functions of EMS. [6 marks]

(e) The function of the Demand Side Management unit is to reduce electricity use through activities or programs that promote and regulate the electrical energy efficiency or conservation. List out **THREE** of its duties and responsibilities. [6 marks]

(f) Complete Table Q4 by providing the respective standard to be used for the regulated electrical equipment. [4 marks]

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Table Q4

| Category | Detail of equipment | National Standard |
|---|---|-------------------|
| Ballast/control gear/driver for lamp | Magnetic ballast for tabular fluorescent lamp | |
| Fan | Moving-louver fan, ceiling fan, auto fan, pedestal fan, table fan, wall fan & applies to their separate regulators and with blade | |
| Self- ballasted compact fluorescent lamps | General lighting services | |
| Multimedia systems | TV, Audio | |

End of Paper

